A

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,728	12/12/2001	David W. Fuller	5150-54300	4599

			EXAMINER
35690	7590	11/09/2005	BAYERL, RAYMOND J

MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

MAILED

NOV 0 9 2005

Technology Center 2100

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/021,728
Filing Date: December 12, 2001
Appellant(s): FULLER ET AL.

Jeffrey C. Hood
<u>For Appellant</u>

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6 September 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal:

US Patent No. 5,784,275 to Sojoodi et al. ("Sojoodi");

US Patent No. 5,506,952 to Choy et al. ("Choy");

US Patent No. 6,064,409 to Thomsen et al. ("Thomsen").

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

(a)   Claims 1 – 4, 7 – 10, 17 – 21, 24 – 26, 31 – 35, 38 – 39, 42 – 50, 54, 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Sojoodi.

As per independent claims 1, 19, 31, 34, Sojoodi discloses a "computer-implemented method for creating a graphical program", this involving "receiving user input selecting one or more nodes to include in the graphical program":

> Referring ahead briefly to FIG. 6, a screen shot of a
> graphical programming environment, according the present
> invention, including a VISA virtual instrument exemplary of
> the VI 50 of FIG. 3 is shown. The screen shot of FIG. 6
> comprises an instrument front panel in a window in the
> upper portion of the screen and a block diagram in a window
> in the lower portion of the screen. The block diagram
> comprises program execution elements, referred to as nodes,
> which are wired together to produce a dataflow program. (col.
> 11 lines 59-67).

The user will put a sequence of blocks to together as demonstrated in the Figure 6, which are connected by wires that will produce a graphical program. By so doing, Sojoodi includes "the one or more specified nodes in the graphical program".

As per the step of "displaying one or more suggested nodes to include in the graphical program in a second palette, based on the one or more nodes selected by the user input", please note Sojoodi's col. 16 line 64 – col. 17 line 2:

> Referring now to FIG. 7, a screen shot including a help
> screen illustrating the terminals of a VISA Write function
> node is shown. The VISA write node is illustrative of most
> VISA function nodes in that it has a VISA session input
> terminal, a dup VISA session output terminal, an error in
> input terminal, and an error out output terminal.

Sojoodi, as is seen in fig 7 and others, provides palettes at each stage of a graphical program's entry sequence, thus reading directly upon the "first palette" and "separate" "second palette" that are seen in claim 1. Within such a "second palette" will be "nodes" that are most certainly the "suggested" ones for the stage that follows first "node" entry. This line of reasoning also applies to broader independent claims 46, 54, since a "graphical user interface" is provided in Sojoodi for "selecting one or more nodes" and "suggested nodes", as by the "palette" that satisfies claim 47, and to the "graphical user interface"/"palette" combination that appears in independent claim 55.

Regarding claims 2, 20, Sojoodi states that the graphical program comprises both "a block diagram portion and a user interface portion" (col. 11 lines 59-67):

> Referring ahead briefly to FIG. 6, a screen shot of a
> graphical programming environment, according the present
> invention, including a VISA virtual instrument exemplary of
> the VI 50 of FIG. 3 is shown. The screen shot of FIG. 6
> comprises an instrument **front panel** in a window in the
> upper portion of the screen and a **block diagram** in a window
> in the lower portion of the screen.

This is also sufficient to read upon the "user interface" "window" of independent claims 35, 44, 45. It is apparent from a study of Sojoodi that a "graphical data flow program" (claims 3, 21) is developed from the interface that is disclosed—"flow" of some form must take place.

Regarding claim 4's "interconnecting nodes...to visually indicate functionality", this is a central feature of Sojoodi. In Figure 6, Sojoodi illustrates interconnecting nodes to allow the user to visual identify the functionality of the graphical program.

As per claim 7's "displaying the one or more suggested nodes" "as shadow nodes that follow a mouse cursor" (see also independent claims 38, 39), Sojoodi notes at (col. 17 lines 27-33) that:

> A programmer "drags" a VISA session control from the Path and Refnum palette, as shown in FIG. 9a, and "drops" the control in a virtual instrument front panel. This "drag" and "drop" operation is performed by the user using a mouse or other pointing device, as is well known in the art.

The drag-and-drop, palette-accessible direct manipulation objects in Sojoodi serve to "shadow" the cursor. By so doing, an "input requesting to include a first suggested node" will result in "including the first suggested node in the graphical program" (claims 8, 24, 32, 48). This is also "automatically including the one or more suggested nodes" (claims 9, 25, 49). In the alternative, the palette in Sojoodi will apply to the situation in which "removal" is intended (independent claims 42, 43); the nodes removed can readily appear in a fig 7, 9A, etc. palette.

Concerning claims 10, 26, 50, Sojoodi discloses "determining the one or more suggested nodes", simply in that the palette contents appear at all in a display like fig 7. At some point, the nodes "suggested" in the palette must have been determined. By a form of "user input" somewhere in the design process of the Sojoodi development platform, a "specifying" of "suggestion criteria" to populate such displays will also take place (claim 17).

Clearly, Sojoodi is directed at least to "a test and measurement function" by disclosing virtual instruments, thus meeting the alternative listing of claim 18.

(b)   Claim 11 - 16, 27 – 30, 36 – 37, 51 – 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sojoodi in view of Choy.

Concerning claims 11, 27, 51, Sojoodi shows a graphical program editor that uses icons to represent functions of a program. The program is created by the user's dragging and dropping icons that are located on a palette onto a whiteboard screen. Sojoodi, with the palette, aids the user in the development process, but Sojoodi does not **explictly** show a system that has the ability to give interactive suggestion to the user depending on the "nodes that are necessary to complete an operation".

However, Choy shows an interactive suggestion depending upon the user's input. Choy also discloses a graphical programming editor that allows the user to create software. The graphical program performs an algorithm that allows the user to create and modify icons from a selectively-greyed palette. Choy's icon palette will display only a certain number of icons depending upon the functionality or compatibility of the software being developed. See, for example, Choy, col. 2 lines 13-22.

It would have therefore been obvious to a person of ordinary skill in the art at the time of the invention was made to add the selective node-prediction palette of Choy into Sojoodi's graphical program, because one of ordinary skill in the art would found motivation in the resultant construction of proper sequences of related elements, which Choy's addition supports by its predictive process. This has the advantage of avoiding improper entries by restricting the user's choices.

Concerning claims 12, 28, Choy teaches "performing an algorithm to determine

the one or more suggested nodes" (col. 5 lines 32-33 & col. 5 lines 46-48):

> The method of FIG. 4E dynamically changes the palette 35 to
> display enabled and disabled icons. Task rules for an expert
> system are formed, modified, and implemented from a
> workstation 13 by the main rule formation method of FIG.
> 4A.

In thus implementing rules, Choy is using an "algorithm".

As in claim 13, Choy's algorithm is also "hard-coded to always determine the

one or more suggested nodes in response to the one or more nodes selected by the

user input", in that the rules have predictable results that "always" produce a certain

effect.

Choy further suggests claims 14, 15, 29, 52, in which "the algorithm is operable

to determine the one or more suggested nodes based on previously stored data

regarding nodes that frequently occur" (col. 2 lines 15-22), since the Choy rules are

directed towards producing optimally, and thus, frequently, usable choices. The use of

a selection algorithm in Choy further suggests the "artificial intelligence heuristic" of

claims 16, 30, 53—a "heuristic" that embodies rule-based reasoning of the kind termed

"artificial intelligence" is at work in Choy.

As per independent claim 36, Choy is specifically directed to "creating a script",

as by the formation of an instruction, and would be an obvious modification to the

Sojoodi "palette"-based interface, as noted above. In Sojoodi, the developed results of

a graphical program drive "an image processing process" (claim 37), if only to produce

the iconic display, which is an image.

(c)   Claims 40 – 41 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sojoodi in view of Thomsen.

Sojoodi, while prompting user input via a palette, does not **explicitly** teach that

the "audio suggestions" of claims 40, 41 be provided. However, audio in graphical

programming environments was well known, and specifically provided for in Thomsen,

where the user can "hear" the signals propagating on the wire or input to/output from the

object (Abstract). Audio, in Thomsen's case, is provided for user assistance.

Thus, it would have been obvious to a person having ordinary skill in the art at

the time of applicant's invention to include "audio suggestions" such as would be readily

available as cues in the AUDIO environment of Thomsen into the Sojoodi graphical

programming arrangement, so as to improve the user's confidence and capability in

creating graphical programs.

(10) Response to Argument

Appellant's arguments begin at page 7 of the brief with an assertion that "the

Examiner has mischaracterized the palettes shown in Fig. 7 of Sojoodi", whereby "the

user may then include function nodes from the 'VISA' palette in the graphical program

under development, e.g., by dragging them from the 'VISA' palette and dropping them

into a block diagram of the graphical program", when the claimed invention instead

presents "one or more suggested nodes to include in the graphical program in a second

palette, based on the one or more nodes selected by the user input". However, on the

basis of an ongoing activity of "node" entry in Sojoodi, a palette can be repeatedly

invoked after each item has been input by the user's aforementioned drag-and-drop

manipulation. When this happens, the completion of one entry is indeed the basis for the palette's re-appearance, and within it are those further "nodes" that are "suggested" as those from which the user may make a subsequent choice.

Regarding the claimed suggestion capability, appellant argues at page 9 that "the nodes displayed in the palette at the end of the hierarchy that the user navigates down are not suggested nodes at all. The palette merely displays all the nodes in the category which the user requested to be displayed." However, it remains that the items appearing at a node-entry stage in Sojoodi constitute suggestions for further entry. This is "based on one or more nodes that the user selected" in that the palette display occurs subsequent to the completion of a previous node entry.

Appellant further argues at page 9 that "the Examiner has taken one of the palettes displayed in Fig. 7 to mean the 'second palette' recited in claim 1, which is not logically compatible with the combination of elements recited in claim 1", since "if one of the palettes displayed in Fig. 7 is taken to mean the second palette then the remaining palettes do not present all available nodes for selection". However, it is the overall generation of the Sojoodi palette after sequential "node" entry that is intended to read upon the claimed invention, in the grounds of rejection. In such a case, "a plurality of all available nodes" will appear at the first invocation of the palette, and when it is called again after a choice is made and another is desired, "one or more suggested nodes" appear.

Concerning claims 9, 25, appellant argues that "Sojoodi...does not teach automatically including a node in a graphical program", but the procedure of palette-

based node selection in Sojoodi in fact involves steps that are "automatically" performed. This is how "receiving user input requesting to include a first suggested node" is carried out, to answer appellant's argument concerning claims 8, 24, 32.

Appellant argues, bridging pages 10 – 11, that the Section 103 rejection of claims 11, 27 based upon Choy is improper, since "Choy teaches disabling icons for certain components that cannot be correctly inserted into an instruction", which is allegedly "not at all the same as determining one or more suggested icons or components that are necessary to complete an operation". However, the palette of Choy, in showing which next items are correct, is an indication of items "necessary to complete an operation performed by the one or more nodes selected by the user input", with "an operation" being the one that a Choy entry from the greyed menu will then enable, in the developed routine. Such further suggestions include those "nodes that frequently occur in graphical programs along with the one or more nodes selected", to answer appellant's argument concerning claims 14, 15, 29.

Concerning claims 16, 30, appellant argues at page 12 that Choy does not teach the use of "an artificial intelligence heuristic to determine one ore more suggested nodes or icons", since "the expert system rules or instructions that are created may ultimately be used in an expert system", but "Choy does not teach the use of an expert system to create the expert system rules and instructions". However, and as is noted above, a "heuristic" is involved in Choy's palette adaptation, and it is a form of "artificial intelligence" in that rules are applied to the user's previous choices so as to derive the subset of palette components that is presented next.

Appellant argues at page 13 (regarding claim 17) that "Sojoodi certainly does not teach or suggest the concept of allowing a user to specify suggestion criteria to be used in determining the suggested nodes". However, a "user" is invariably involved in the setup of the Sojoodi palette, and this is enough to satisfy the claim.

To answer appellant's argument at page 14 regarding claim 35, Sojoodi, in showing "nodes" that may be added following a previous "node" entry, is in fact "determining one or more suggested user interface elements", since the graphical environment of Sojoodi presents the "nodes" as "user interface elements" while they are being selected and entered.

After providing case citations regarding obviousness and the need to show motivation to combine, appellant argues at page 15 that "the Examiner is essentially stating that the motivation to combine Choy with Sojoodi would be the alleged improvement achieved, which of course is no more than hindsight". However, it is immediately seen in a consideration of Sojoodi that the user is seeking to enter proper "nodes" in sequence, and is capable of producing erroneous entries. This provides the missing motivation to use the palette greying routine of Choy, so that only valid choices remain. Sojoodi itself suggests the modification.

Further in support of the argument against the combination of references, appellant argues that "[s]ince Choy's icon disabling method depends fundamentally on an icon classification technique which does not apply to Sojoodi's graphical program nodes, ... one skilled in the art would not be motivated to use the icon disabling method taught in Choy in Sojoodi's graphical programming system". However, the governing

usefulness with Choy is that a palette is selectively greyed to show what is appropriate

for further item-entry. It does not matter, in particular, that "icon classification" is also

used in Choy, which has direct applicability in its suggestion to the Sojoodi palette.

Concerning claim 37, appellant argues at page 17 that "displaying a plurality of

icons (which is presumably what the Examiner means by producing an 'iconic display'

[as per Sojoodi]) is not at all what is meant by performing an image processing

process". However, the Examiner is not permitted to read anything more into "image

processing" than that an image process has been performed, and Sojoodi's icon-

generation generates an image of the icons and processes images.

At page 18, appellant makes the generally-blank statement that "Sojoodi also

does not teach 'displaying the one or more suggested nodes as shadow nodes that

follow a mouse cursor." However, and as is discussed above, a dragged icon from a

Sojoodi palette will "shadow" the cursor, in its association before being dropped.

At page 19, concerning the rejections of claims 40, 41 that additionally rely upon

Thomsen, appellant argues that Thomsen fails, as Sojoodi does, to "teach the concept

of determining one or more suggested nodes to include in a graphical program".

However, the manner in which Sojoodi in fact does this is described in the response

above, and Thomsen is merely relied upon to show audio cues to prompt a designer.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the
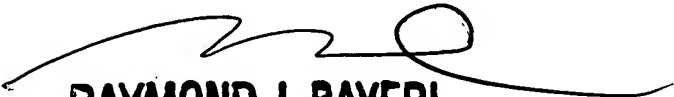
Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

November 3, 2005

RAYMOND J. BAYERL
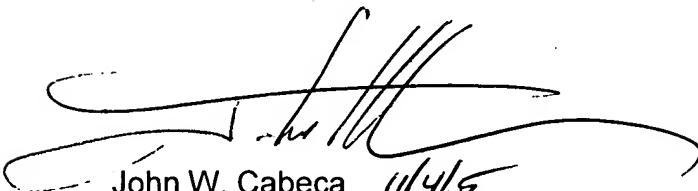PRIMARY EXAMINER
ART UNIT 2173
Raymond J. Bayerl
Primary Examiner
Art Unit 2173

Conferees

KRISTINE KINCAID
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Kristine Kincaid
Supervisory Patent Examiner
Art Unit 2174

John W. Cabeca
Supervisory Patent Examiner
Art Unit 2173

MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398